TEXAS THERMOSET RESIN FACILITIES

STANDARD EXEMPTION #113

A Guide to Requirements and Record-Keeping

First Edition

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TNRCC offers the Small Business Technical Assistance Program (SBTAP) because small businesses have trouble finding and understanding environmental rules. Small businesses with fewer than 100 employees can receive free, confidential services and information by contacting the SBTAP office.

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P.O. Box 13087
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WHAT INFORMATION WILL I FIND IN THIS BOOKLET?

PART I: QUESTIONS AND ANSWERS

WHAT IS A STANDARD EXEMPTION?

If you wish to construct or operate a facility in Texas that emits air contaminants, you must either have an air quality permit, be "grandfathered" or qualify for the applicable exemption from the air permit process. These exemptions are referred to as "standard exemptions."

The term "standard exemption" refers to a "standard" set of conditions that, if met by a facility, "exempts" that facility from the state air permit process. By meeting these conditions, a facility will not be making a significant contribution to air pollution.

Some of the standard exemptions require you to submit a registration form, while other standard exemptions can simply be claimed without notifying the Texas Natural Resource Conservation Commission (TNRCC). Even when a standard exemption requires registration, it is still simpler and faster than obtaining a permit. In addition, no fee is required to claim or register for a standard exemption.

By law, a business is required to meet the requirements of a standard exemption (or obtain a permit) before construction and operation of a facility. For a variety of reasons, however, some small businesses have not done so. If your facility is already operating and does not have the required authorization, you can and should get that authorization now.

DO ANY STANDARD EXEMPTIONS APPLY TO THERMOSET RESIN FACILITIES?

State regulations allow more than 120 exemptions from the state air permitting process. Included in this booklet is information on one of them, Standard Exemption 113. Standard Exemption 113 has to do with controlling emissions typically generated by a cultured marble shop, a fiber-reinforced plastic shop, or any other facility which uses

thermoset resin composites. The entire Standard Exemption 113, as adopted word-for-word in the state regulations, is provided in Appendix A of Part II.

HOW DO I FIND OUT IF MY FACILITY MEETS THE REQUIREMENTS OF STANDARD EXEMPTION 113?

Complete the Standard Exemption 113 checklist, which is provided for you in Appendix B. The checklist is a guide to help you find out if you meet the conditions of the exemption. The checklist includes questions on all the conditions you must meet in order to qualify for Standard Exemption 113. If you do not meet any one of the conditions, you need to modify your shop or equipment, or apply for a permit. If you do meet all the conditions, be sure you can verify that you meet them should an inspector ever visit your facility.

Some of the conditions referenced in the checklist are illustrated in the appendices in the back of this booklet. Appendix C illustrates some stack designs which meet the conditions of Standard Exemption 113 and others which do not meet the conditions. Appendix D illustrates a sample record-keeping format which meets the conditions of Standard Exemption 113.

WHAT IF MY FACILITY DOESN'T MEET THE REQUIREMENTS OF STANDARD EXEMPTION 113?

If your facility doesn't already meet the requirements, you may modify your facility so it does. If that is not possible, another option is to get an air permit.

One other option exists for some facilities. If your facility was in operation before September 1, 1971, it may be "grandfathered" (exempted) from requirements for state air permits. In order to claim that your facility is grandfathered, you must be able to prove all of the following:

- that your facility was in operation before September 1, 1971; and
- that you have not modified or changed any equipment or methods of operation since September 1, 1971; and
- that you have not changed the type of resins, solvents, pigments or other chemicals you use since September 1, 1971; and
- that you have not increased the amount of resins, solvents, pigments or other chemicals you use since September 1, 1971.

It is difficult for most thermoset resin facilities to meet all four conditions required to prove grandfathered status. To stay competitive, most have added new, more efficient equipment over the years or have begun using different materials.

If you want more information about whether you are grandfathered...
CALL US at 1-800-447-2872.

IF I DO QUALIFY FOR THE EXEMPTION, DO I SEND THE ENCLOSED CHECKLIST TO TNRCC?

No, you don't need to send your completed checklist to the TNRCC. The checklist is simply provided to help you find out if you meet all the conditions of Standard Exemption 113. Keep a copy of the completed checklist and supporting documentation (such as purchase records and Material Safety Data Sheets) on-site to verify your claim.

WHO MUST COMPLETE A PI-7 REGISTRATION FORM?

Any facility that sprays resin or gelcoat during *any* phase of manufacturing and uses more than 1,000 pounds (half a ton) of resin and gelcoat per year must submit a PI-7 form. Any facility that *never* sprays resin or gelcoat during any phase of manufacturing and uses more than 3,000 pounds (one and a half a tons) of resin and gelcoat per year must submit a PI-7. Please be sure to submit all required supporting documents along with your PI-7. If you already have a permit for this operation, you do not need to complete the PI-7.

If you use less than these amounts, you do not have to submit a PI-7, but you must still keep the necessary records to verify the amount of resin and acetone you use. Refer to Standard Exemption 113(a)(2) in Appendix A or checklist questions 16-18 in Appendix B.

If at any time you should exceed these minimum amounts and do not have a state air permit, you must submit a PI-7 form. You should review the entire 113 Checklist again to be sure that you will meet all the requirements. If you will not, then you must modify your operation to meet the standard exemption or apply for a permit.

WHERE DO I GET A COPY OF THE PI-7 FORM?

A copy of the PI-7 registration form is provided for you in this booklet. Please refer to Appendix E.

HOW DO I FILL OUT THE PI-7 FORM?

Complete instructions for filling out the PI-7 form are also provided for you in this booklet. Please refer to Appendix F for general instructions and Appendix G for specific guidelines on calculations.

WHERE DO I SEND MY COMPLETED PI-7 FORM?

You may wish to keep the original PI-7 in this booklet for your own records.

Everyone who must register needs to send one copy of their completed PI-7 form and supporting documents to the TNRCC headquarters. The exact mailing address is printed at the top of the form. Although you may send a photocopy of your original form, make sure this copy has an original signature on it.

Everyone who must register also needs to send a second copy to their regional TNRCC office. Appendix H shows a map of Texas divided into TNRCC regions. Once you know which TNRCC region you're located in, you can look up the mailing address in Appendix I. Again, you may send in a photocopy of your original form, but your original signature is not necessary on this copy.

Some cities and counties are contracted with the TNRCC to enforce Texas regulations. If your facility is located in one of the cities or counties listed in Appendix J and you must register for Standard Exemption 113, you must send a third copy to the appropriate "local program." Simply use the address given in Appendix J.

WHAT HAPPENS AFTER I SUBMIT MY PI-7 FORM?

All PI-7 forms are processed by the TNRCC at the Austin headquarters office. Your registration will be handled as follows:

1) A project number will be assigned to your registration form.
2) A TNRCC account number will be assigned to your facility.
3) Your PI-7 registration form will be reviewed for completeness.
4) If your PI-7 is complete, you will be notified by letter stating that TNRCC has registered your claim for Standard Exemption 113. If your PI-7 is not complete, you will receive a phone call or letter requesting additional information before the TNRCC can determine whether all the requirements have been met.

WHAT SHOULD I DO IF I RECEIVE AN INSUFFICIENT INFORMATION LETTER?

You can resubmit your PI-7 form with the additional information or corrections.

ABOUT HOW LONG WILL IT TAKE TNRCC TO REVIEW, PROCESS AND RESPOND TO MY REQUEST FOR A STANDARD EXEMPTION 113 ONCE I SUBMIT MY PI-7?

The typical turnaround time for processing a standard exemption is about four weeks.

WHAT RECORDS SHOULD I KEEP TO SUPPORT MY CLAIM?

Regardless of whether you must register for Standard Exemption 113, you must keep the following records:

- purchase records for all resins (including gelcoat) and solvents purchased within the most recent 24 months.

In addition, those who must register to claim the exemption must keep supporting documentation. Examples include:

- your completed 113 Checklist;
- Manufacturer's Safety Data Sheets (MSDSs) on resins (including gelcoat) and solvents used within the last 24 months;
- manufacturer's information on filter efficiency;

■ manufacturer's information for all equipment such as spray guns, cleaning units and booths;
■ sketches of shop-made equipment.

WHAT HAPPENS IF I MAKE CHANGES TO MY FACILITY AFTER CLAIMING STANDARD EXEMPTION 113?

If at any time you make any changes to your operation or production, you should review the entire 113 Checklist again to be sure that you still meet all the requirements. If you no longer meet all the requirements, then you must modify your operation to continue to meet the standard exemption or apply for an air quality permit.

WHAT IF I DO NOT MEET THE CONDITIONS OF STANDARD EXEMPTION 113?

If your facility cannot meet the requirements of Standard Exemption 113, you must obtain an air quality permit from the TNRCC.
If you need information about air quality permits . . .
CALL US AT 1-800-447-2827.

Please note that TNRCC standard exemptions do not release a facility from complying with all other federal, state and local air laws, or other environmental regulations. For more information on these regulations, please read "An Environmental Guide for Texas Thermoset Resin Facilities: An Overview of Pollution Prevention, Rules, and Permits" (TNRCC publication number RG-113 (2/95)).

IS STANDARD EXEMPTION 113 THE ONLY ONE I CAN CLAIM?

Some businesses that use thermoset resins also do other things that can cause air pollution. A good example is a boat repair shop that makes repairs with resins in addition to painting boats. Standard Exemption 75 is for general surface coating such as painting boats. Another example is an auto paint and body shop that makes repairs with resins in addition to painting cars. Standard Exemption 124 is specifically for surface coating in the auto paint and body industry. A third example is any facility that uses resin and also does abrasive cleaning. Standard Exemption 102 covers abrasive cleaning.
If your business includes any of these or other processes which emit air pollution . . .
CALL US AT 1-800-447-2827

PART II: APPENDICES

STANDARD EXEMPTION 113 - POLYESTER/THERMOSET RESINS

Effective May 4, 1994
Incorporated By Reference Into 30 TAC 116,
Control Of Air Pollution By Permits For New Construction
Or Modification, §116.211

Note: Standard Exemptions exempt the processes and equipment they list or describe from the Texas Natural Resource Conservation Commission (TNRCC) air permitting process. However, a facility claiming one or more standard exemptions **may** still need a permit for other, non-exempt processes and equipment. Further, a standard exemption does not exempt a facility from other TNRCC rules and regulations.

113. Facilities using thermoset resins (including but not limited to polyester resins) to manufacture or repair products, provided that the following conditions are satisfied for (a) and either (b) or (c):

(a) The following requirements shall apply to all thermoset resin facilities:
  (1) Before construction begins, the owner or operator shall file with the Office of Air Quality a completed Form PI-7 and supporting documentation demonstrating that all of the requirements of this exemption will be met. A copy of the registration form and all supporting documents shall be sent to the appropriate Regional Office and any local air pollution program having jurisdiction.
  (2) The owner or operator of this facility shall keep records of resin and acetone usage in pounds on a monthly and calendar year-to-date basis, and shall maintain these records on a calendar year basis with a two-year rolling retention period. This information shall be in sufficient detail to demonstrate compliance with part (b) or (c) as follows, and shall be made available at the request of personnel from the TNRCC or any local air pollution control agency having jurisdiction.
  (3) All resin fabrication and cleaning operations shall be conducted during daylight hours. The exhaust fan(s) must be operating during and for at least 30 minutes after any usage of resin and/or cleaning solvents.

(b) The following requirements shall apply to facilities that have spraying operations (the facilities may include non spraying operations):
  (1) No more than 75 tons of resin and gelcoat combined and 0.75 tons of acetone shall be used per year (gross usage minus waste disposal).
  (2) All solid trim grinding operations shall be vented through a dry filter system or a water wash system which has a particulate removal efficiency of at least 95%. Particulates trapped in the dry filter system or water wash sludge shall be handled and stored in such manner as to prevent the escape of fugitive dust emissions.
  (3) All resin spraying operations shall be conducted in a booth or an enclosed work area and the emissions shall be exhausted through elevated stack(s). All stacks shall discharge vertically to the atmosphere with no restrictions or obstructions to flow. Each stack shall meet one of the following requirements:
    (A) a stack height at least 25 feet above grade and a minimum flow rate of 20,000 acfm, or
    (B) a stack height at least 30 feet above grade and a minimum flow rate of 15,000 acfm.
  (4) If annual resin usage is less than 1,000 pounds, then the owner or operator of this facility shall be exempt from all requirements of this exemption except record-keeping [See 113(a)(2)].

(c) The following requirements shall apply only to non-spraying operations:
  (1) No more than 150 tons of resin and gelcoat combined and 1.5 tons of acetone shall be used per year (gross usage minus waste disposal).
  (2) All solid trim grinding operations shall be vented through a dry filter system or a water wash system which has a particulate removal efficiency of at least 95%. Particulates trapped in the dry filter system or water wash sludge shall be handled and stored in such a manner as to prevent the escape of fugitive dust emissions.
  (3) All resin operations shall be conducted in a booth or an enclosed work area or the manufacturing building and the emissions shall be exhausted through elevated stack(s). All stacks shall discharge vertically to the atmosphere with no restrictions or obstructions to flow. Each stack shall meet one of the following requirements:
    (A) a stack height at least 25 feet above grade and a minimum flow rate of 20,000 acfm, or
    (B) a stack height at least 30 feet above grade and a minimum flow rate of 15,000 acfm.
  (4) If annual resin usage is less than 3,000 pounds, then the owner or operator of this facility are exempt from all requirements of this exemption except record-keeping [See 113(a)(2)].

APPENDIX B

Texas Natural Resource Conservation Commission

STANDARD EXEMPTION 113 CHECKLIST

1. Will you spray resin or gelcoat during any stage of operation at your facility?
   - yes ❑ If yes, continue on to question 2.
   - no ❑ If no, skip to question 6.

CONDITIONS FOR FACILITIES THAT SPRAY

2. Will you use less than 1,000 pounds of resin and gelcoat combined per year?
   - yes ❑ If yes, skip to question 17.
   - no ❑ If no, continue on to question 3.

3. Will you use less than 75 tons of resin and gelcoat combined per year? (That's 150,000 pounds, or about three hundred 55-gallon drums annually.)
   - yes ❑ If yes, continue on to question 4.
   - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

4. Will you use less than .75 tons of acetone per year? (That's 1,500 pounds, or about four 55-gallon drums annually.)
   - yes ❑ If yes, continue on to question 5.
   - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

5. Will all your resin and gelcoat spraying operations be conducted in a booth or in an enclosed area?
   - yes ❑ If yes, skip to question 10.
   - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

CONDITIONS FOR FACILITIES THAT NEVER SPRAY

6. Will you use less than 3,000 pounds of resin and gelcoat combined per year?
   - yes ❑ If yes, skip to question 17.
   - no ❑ If no, continue on to question 7.

7. Will you use less than 150 tons of resin and gelcoat combined per year? (That's 300,000 pounds, or about six hundred 55-gallon drums annually.)
   - yes ❑ If yes, continue on to question 8.
   - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

8. Will you use less than 1.5 tons of acetone per year? (That's 3,000 pounds, or about eight 55-gallon drums annually.)
   - yes ❑ If yes, continue on to question 9.
   - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

9. Will all your resin and gelcoat operations be conducted in a booth or in an enclosed area or in your manufacturing building?
   - yes ❑ If yes, continue on to question 10.
   - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

STACK CONDITIONS

10. Will all emissions from your resin and gelcoat operations be exhausted through elevated stacks that meet the requirements of either (A) or (B) below:
    (A) stack height at least 25 feet above ground level and a minimum flow rate of 20,000 actual cubic feet per minute (acfm), or
    (B) stack height at least 30 feet above ground level and a minimum flow rate of 15,000 acfm.
    - yes ❑ If yes, continue on to question 11.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

11. Will your stacks discharge vertically to the atmosphere with no obstruction to airflow? This means no rain caps, goosenecks, turbines, etc. This also means no side exhausts. (See Appendix C for illustrations.)
    - yes ❑ If yes, continue on to question 12.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

GENERAL CONDITIONS

12. Will you operate your exhaust fans during and for at least 30 minutes after any usage of resin, gelcoat and/or cleaning solvents?
    - yes ❑ If yes, continue on to question 13.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

13. Will all your resin fabrication and cleaning operations be conducted either after sunrise or before sunset?
    - yes ❑ If yes, continue on to question 14.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

14. Will all solid trim grinding operations be vented through a dry filter system or a water wash system which has a particulate removal efficiency of at least 95%?
    - yes ❑ If yes, continue on to question 15.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

15. Will all particulates (dust) trapped in your dry filter system or a water wash system be handled and stored in a way that prevents the escape of fugitive emissions?
    - yes ❑ If yes, continue on to question 16.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

RECORD-KEEPING

16. Will you maintain records to demonstrate compliance with the following:
    - ■ particulate removal efficiency of at least 95% on your filter system for solid trim grinding operations (see question 14 above);
    - ■ adequate stack height (see question 10 above);
    - ■ adequate flow rate (see question 10 above);
    - yes ❑ If yes, continue on to question 17.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

17. Will you keep records of resin and acetone usage in pounds on a monthly and calendar year-to-date basis, maintaining these records for the most recent 24-month period? (See Appendix D for an example.)
    - yes ❑ If yes, continue on to question 18.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

18. Will you make your records readily available to any TNRCC personnel or any local pollution control agency with jurisdiction?
    - yes ❑ If yes, continue on to item 19.
    - no ❑ If no, you cannot qualify for Standard Exemption 113. You must either make the changes to meet this requirement or get a state air permit.

REGISTRATION

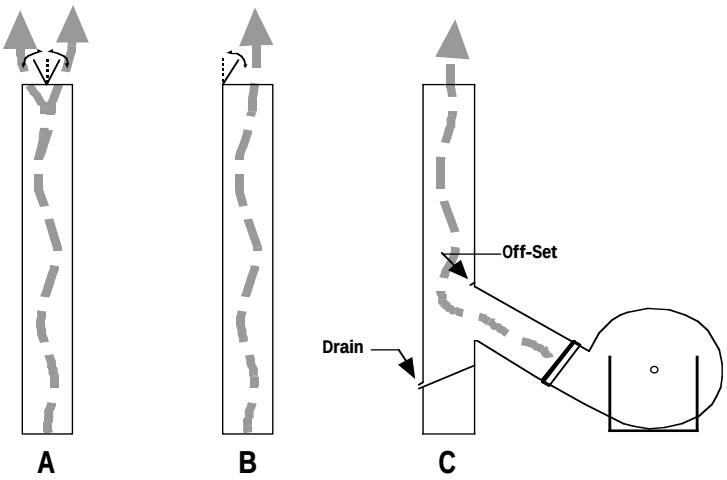
19. If all of your answers above indicated that you are eligible for Standard Exemption 113, you may claim the exemption for your operation. Most facilities must register this claim using the form PI-7. (See Appendix E.)

    However, if you spray at your facility and use less than 1,000 pounds of resin annually, you do not need to register. Likewise, if you never spray and use less than 3,000 pounds of resin, you do not need to register. Instead, your records (see question 17-18, but not question 16) are sufficient to show you are claiming Standard Exemption 113.

    If any of your answers above indicate that you are ineligible for Standard Exemption 113, you must either make the changes to meet all requirements or get a state air permit.

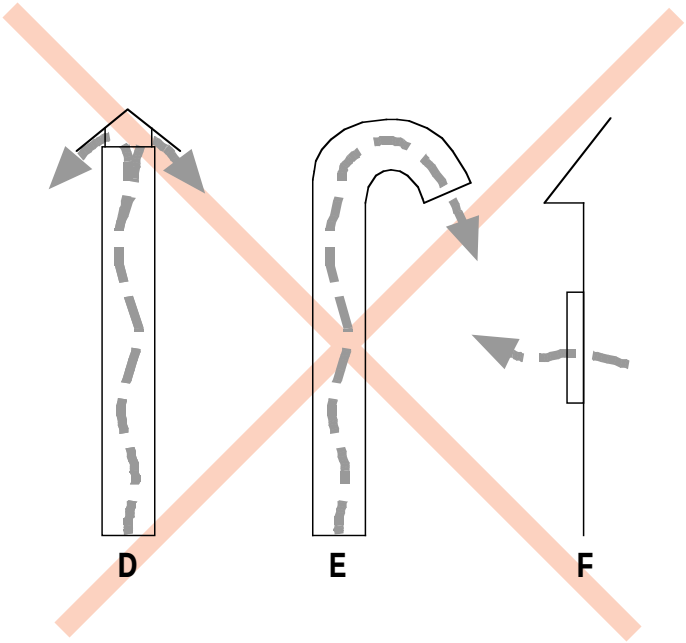
APPENDIX C

EXAMPLES OF ACCEPTABLE STACK DESIGNS



Examples A, B and C offer rain protection without obstructing air flow. The rain protection on Stacks A and B is completely open when the fan is on. Stack C is designed so that water drains out the side of the stack.

EXAMPLES OF UNACCEPTABLE EXHAUST DESIGNS



Examples D, E and F do not meet the requirements of Standard Exemption 113. The cap on Stack D obstructs vertical discharge of air contaminants. Stack E, a gooseneck, also prevents vertical discharge. The side exhaust, Example F, discharges emissions horizontally and therefore also does not meet the requirements for vertical discharge.

SAMPLE RECORD-KEEPING FORM

All facilities claiming Standard Exemption 113 must keep usage records, even those that don't have to register. The following is an example of an acceptable form for those records. You may copy it for your use. However, you are not required to use this particular form. Just remember that whatever record-keeping method and form you use must show whether you meet the usage limits of the standard exemption.

Month	Year	Resin and Gelcoat Usage (in pounds)	Acetone Usage (in pounds)	Cumulative Acetone Usage during last 24 Months (in pounds or tons*)	Cumulative Resin and Gelcoat Usage during last 24 months (in pounds or tons*)

* one ton equals 2,000 pounds

Remember, if you must register to claim Standard Exemption 113, there are other records you must keep as well. See pages 4, 5 and 9 for details.

APPENDIX D

Texas Natural Resource Conservation Commission

REGISTRATION FORMS FOR STANDARD EXEMPTIONS

FORM PI-7

Please mail to: TNRCC, Office of Air Quality, New Source Review Program (MC 162), P.O. Box 13087, Austin, TX 78711-3087

I. Company Name _____
(Corporation, Company, Government Agency, Firm, etc.)

Mailing Address _____

Individual Authorized to Act for Applicant:Name _____ Title _____

Address _____ Telephone _____ FAX#: _____

II. LOCATION OF EXEMPT FACILITY (Latitude and Longitude must be to the nearest second):

Name of Plant or Site _____

Street Address _____

Nearest City _____ County _____ Latitude _____ Longitude _____

Site Requirements: A. Submit a plot plan to scale of the property showing the location of plant boundaries, plant equipment, and surrounding area.

B. Furnish an area map with a scale showing the facility location relative to highways and towns.

III. TYPE OF FACILITY

A. Applicable Standard Exemption Number(s) from TNRCC List _____

B. Name of Facility and Company's Facility Number _____

C. TNRCC Account Identification Number _____

D. Previous Special Exemption or Permit Number _____

E. Operating Schedule: Hours/day _____ Days/week _____ Weeks/year _____

F. Proposed Start of Construction _____ (Date) Operation _____ (Date)

G. Permanent ❑ Portable ❑

H. Length of time at this site, if portable: _____

IV. PROCESS INFORMATION

Description of Process: Prepare and attach a written description of the exempt process and applicable checklists (when available). The description must be in sufficient detail to indicate that the facility will conform to the specified exemption.

V. EMISSIONS DATA Furnish a description of the basis for emission rates including fugitives. (Calculations, emission factors, measurement, NSPS, etc.)

Emission Point Number	Name of Source	Name of Air Contaminant	Emission Rate of Each Air Contaminant			
			lb/hr		tons/yr	
			Gaseous	Particulate	Gaseous	Particulate

VI. A copy of the application is being sent to the Regional Office of the TNRCC: ❑ Yes ❑ No

VII. I, _____
Name Title

state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption. The facility will operate in compliance with all Regulations of the Texas Natural Resource Conservation Commission and with Federal Environmental Protection Agency Regulations governing air pollution.

Date _____ Signature _____

TNRCC-0519 (05-08-95)

INSTRUCTIONS FOR COMPLETING PI-7 FORM

SECTION I. COMPANY NAME

Enter the complete name and mailing address of your business. Enter your name and title unless you have authorized someone to act on your behalf, like a partner, employee, consultant, accountant, attorney or family member. In that case, provide that person's name, title and address. Provide your telephone and fax numbers, or those of the person authorized to act on your behalf.

SECTION II. PHYSICAL LOCATION OF SHOP

Enter the name used for the business at this site. In many cases, this will be the same as the company name in Section I. Enter the street address of the facility. Do not list a route number or post office box. If there is no street address, enter a description of the location. For example: "South side of FM 2311, 1.7 miles east of U.S. 79." Enter the nearest city and the county where the facility is located. If you can, provide the longitude and latitude of your facility, expressed to the nearest second.

For Section II (A), submit a facility diagram, drawn to scale. This diagram should show the location of plant equipment and boundaries. Assign a number and name to each area from which air pollutants might be emitted. (These are your "emission points.") For example, you might assign the number "1" to your spray booth, "2" to your cleanup area, and "3" to your trim booth. (You will need the numbers and names you assign to each emission point again when completing Section V.)

For Section II (B), submit an area map with a scale showing the facility's location in relation to the nearest highways and towns.

SECTION III. OPERATING TIME AND START OF OPERATION

A. Write in the number of the exemption you wish to claim. Of course, for thermoset resin facilities, write in the number "113." If you need to claim other standard exemptions, write those numbers in as well. Although it is not mandatory, you can and should use one PI-7 form for all processes at your facility that require this form.
B. If your facility is one of several belonging to one company, give the name and number your company uses to identify your particular facility. Otherwise, simply write in your company name again.
C. If the TNRCC air program has previously worked with your facility, you should have an air account identification number. Write that here. If the TNRCC air program has never worked with your facility, write "to be assigned by TNRCC" here. If you are uncertain, call us for confidential assistance at 1-800-447-2827.
D. If your facility has previously had a TNRCC special exemption or a permit, you should have a special exemption or permit number. Write that (or those) here. If your facility has never had a TNRCC special exemption or permit, write "not applicable" here. If you are uncertain, call us for confidential assistance at 1-800-447-2827.
E. Enter the normal operating schedule – hours per day, days per week, and weeks per year – that you operate or that you intend to operate the facility. (For example: 9 hours per day, 6 days per week, 52 weeks per year.)
F. If you are just beginning to operate at this location, enter the date you plan to begin. If you are already operating, enter the date your facility started operating at this location.
G. Check the appropriate box to indicate whether your facility is permanent or portable.
H. If the facility is portable, write in the length of time the facility will be at this site. If your facility is permanent, write "not applicable" here.

APPENDIX F

APPENDIX F (CONT.)

SECTION IV. PROCESS INFORMATION

Prepare and attach a written description of the exempt process. Your written description must indicate how you meet the conditions of the exemption. You may therefore wish to refer to the actual regulation (Appendix A) or the checklist (Appendix B) when writing your description. Other useful information includes things such as the products you will be manufacturing; whether you use hand layup, spray up, extrusion, filament winding, etc.; whether you use open or closed molds and mixers; and the styrene content of your resin(s) and gelcoat(s). You do not, however, need to submit a copy of your checklist.

SECTION V. CALCULATING EMISSIONS DATA

First calculate your air emissions. This will include all emissions, including gaseous (such as styrene and acetone) as well as particulate matter (such as dust from grinding flash). Please refer to Appendix G for details on calculating emissions.

Second, fill out the chart provided in this section. Under the column labeled "Emission Point Number," use the numbers you assigned to each emission point at your facility on the diagram required in Section II above. Likewise, under the column labeled "Name of Source," use the names assigned on that diagram. Under the column labelled "Name of Air Contaminant," list the compound or substance that is emitted into the air from that point of your facility. Under the columns labeled "Emission Rate of Each Air Contaminant," provide both hourly and annual emissions data for each air contaminant. (Again, please refer to Appendix G for details on calculating emissions.)

Third, prepare and attach a written description of the basis for your emission rate calculations. Include the following: the total quantities of resins, gelcoats and acetone used; the styrene content of your resins and gelcoats; the type of manufacturing process; and the corresponding "AP-42" emissions factors (see Appendix G).

SECTION VI. COPY TO REGIONAL OFFICE

You must send two copies of your completed form to the TNRCC, one to the headquarters in Austin, the other to your regional office. The address for headquarters in Austin is provided at the top of the PI-7 form. Send a second copy of the completed PI-7 to your TNRCC Regional Office. Use the map provided in Appendix H to determine which TNRCC region your facility is in. Then look up the address of your regional office in Appendix I.

You must also provide a copy to any local pollution control programs in your area. Refer to Appendix J for a list of local programs. Finally, keep the original, completed form or a copy for your records.

SECTION VII. SIGNATURE

Print your name and title on the first line. Date and sign the form. The form you send to Austin must have an original signature. The form you send to the regional office does not need an original signature.

CALCULATING EMISSIONS

Emissions of volatile organic compounds (VOCs) occur from process applications of resins, gelcoats, and solvents. Emissions of particulate matter (PM) result from grinding. Section V of the PI-7 form requires you to calculate both short-term (pounds per hour) and long-term (tons per year) emissions of both VOCs and PM. To do this, first gather the relevant data. Second, calculate your short-term emissions, following the examples in this section, but inserting your own data. Third, calculate your long-term emissions. Again, follow the examples provided, but insert your own data. Finally, record your results in Section V of the PI-7 form.

These steps are laid out for you below, with examples provided in grey text from a fictional facility where all resin and gelcoat is non-vapor-suppressed and is applied by spray layup.

STEP I. GATHER YOUR DATA:

In order to do the calculations, you must first gather the necessary data. Your usage or spray rates for resin and gelcoat should reflect the greatest amount your spray guns can spray, or the greatest number of molds that can be sprayed at your facility in one hour. You can get the maximum styrene content of resin and gelcoats from your Material Safety Data Sheet. Filter efficiency data can be obtained from filter suppliers/manufacturers. Annual usage rates can be determined from previous manufacturing records or from business projections. Remember, the data below are examples only. When calculating emissions for your PI-7 form, you must use data from your facility.

Data for Gelcoat Calculations

usage or spray rate = 30 lb/hr per spray gun
(see spray gun spec sheet)
number of spray guns = 1
maximum styrene content = 40% by weight
(see gelcoat MSDS)
annual usage = 25,000 lb/yr

Data for Resin Calculations

usage or spray rate = 100 lb/hr per spray gun
(see spray gun spec sheet)
number of spray guns = 2
maximum styrene content = 32% by weight
(see resin MSDS)
annual usage = 125,000 lb/yr

Data for Acetone Calculations

daily usage = .8 gallons
actual hours acetone is used per day = 9 hours
weight of acetone = 6.64 lb/gal
annual usage = 210 gallons/yr

Data for Trimming & Grinding Calculations

maximum amount ground off per hour = 2.5 lb/hr
(measure quantity captured in and around filter)
filter efficiency = 95%
annual amount ground off = 6,000 lb/yr

All other data you will need is provided in the chart on page 16. The chart contains factors which are provided by the Environmental Protection Agency. The numbers represent the percent of styrene expected to be emitted from your resin or gelcoat, depending whether it is vapor suppressed or not, and depending upon the process used. Please note that a range of numbers is given. You should use the high number in the range to calculate short-term emissions, and the midpoint to calculate long-term emissions.

For example, if the process you use is spray layup and your resin is non-vapor-suppressed, use 0.13 (or 13 percent) when the formula calls for "max AP-42 factor" in calculating short-term styrene emissions. For long-term styrene emissions, use 0.11 (which is the midpoint between 0.09 and 0.13) when the formula calls for "average AP-42 factor."

You may be wondering why the formulas for calculating short and long-term emissions are different. The reason is that the short- and long-term emission rates are used for different purposes. The short-term emissions must reflect the highest potential emissions at any one point in time from your facility. This is a particular concern in the thermoset resin industry because high concentrations of styrene emissions can create a nuisance odor. The long-term emissions, on the other hand, must reflect the average air emissions from your facility over the course of a year.

APPENDIX G

AP-42 EMISSION FACTORS FOR POLYESTER RESIN PRODUCT FABRICATION PROCESSES				
Process	**Resin**		**Gelcoat**	
	Non Vapor-Suppressed	Vapor-Suppressed	Non Vapor-Suppressed	Vapor-Suppressed
Hand layup	0.05 - 0.10	0.02 - 0.07	0.26 - 0.35	0.08 - 0.25
Spray layup	0.09 - 0.13	0.03 - 0.09	0.26 - 0.35	0.08 - 0.25
Continuous lamination	0.04 - 0.07	0.01 - 0.05	▼	▼
Pultrusion	0.04 - 0.07	0.01 - 0.05	▼	▼
Filament winding	0.05 - 0.10	0.02 - 0.07	▼	▼
Marble casting	0.01 - 0.03	0.01 - 0.02	✶	✶
Closed molding	0.01 - 0.03	0.01 - 0.02	▼	▼

▼ Gelcoat is not normally used in this process.

✶ Factors unavailable. However, when cast parts are subsequently sprayed with gelcoat, hand and spray layup factors for gelcoat are assumed to apply.

STEP II. CALCULATE SHORT-TERM EMISSIONS (POUNDS PER HOUR):

Short-term Gelcoat Calculations

spray rate x # of spray guns x max styrene content of gelcoat *(see MSDS)* x max average AP-42 factor *(see chart)* = VOC $\frac{lb}{hr}$

$\frac{30\ lb\ gelcoat}{hr}$ x $\frac{1\ gun}{}$ x $\frac{0.40\ lb\ styrene}{1\ lb\ gelcoat}$ x $\frac{0.35\ lb\ styrene\ emitted}{1\ lb\ styrene}$ = $4.2\ \frac{lb\ styrene}{hr}$

Short-term Resin Calculations

spray rate x # of spray guns x max styrene content of resin *(see MSDS)* x max average AP-42 factor *(see chart)* = VOC $\frac{lb}{hr}$

$\frac{100\ lb\ resin}{hr}$ x $\frac{2\ guns}{}$ x $\frac{0.32\ lb\ styrene}{1\ lb\ resin}$ x $\frac{0.13\ lb\ styrene\ emitted}{1\ lb\ styrene}$ = $8.3\ \frac{lb\ styrene}{hr}$

Short-term Acetone Calculations (assume 100% evaporation)

$\frac{\text{volume usage}}{\text{rate per day}}$ x weight of acetone x $\frac{1\ day}{\text{actual hours of daily use}}$ = VOC $\frac{lb}{hr}$

$\frac{8\ gal}{day}$ x $\frac{6.64\ lb}{gal}$ x $\frac{1\ day}{9\ hr}$ = $.59\ \frac{lb}{hr}$

Short-term Trimming & Grinding Calculations

amount of waste per hour x (1 minus filter efficiency) = PM $\frac{lb}{hr}$

$\frac{2.5\ lb}{hr}$ x $(1 - 0.95)$ = $.125\ \frac{lb}{hr}$

STEP III. CALCULATE LONG-TERM EMISSIONS (TONS PER YEAR):

Long-term Gelcoat Calculations

annual usage x max styrene content of gelcoat *(see MSDS)* x average AP-42 factor *(see chart)* x $\frac{1 \text{ ton}}{2000 \text{ lb}}$ = VOC $\frac{\text{tons}}{\text{yr}}$

$\frac{25{,}000 \text{ lb gelcoat}}{\text{yr}}$ x $\frac{0.40 \text{ lb styrene}}{1 \text{ lb gelcoat}}$ x $\frac{0.305 \text{ lb styrene emitted}}{1 \text{ lb styrene}}$ x $\frac{1 \text{ ton}}{2000 \text{ lb}}$ = 1.525 $\frac{\text{tons styrene}}{\text{yr}}$

Long-term Resin Calculations

annual usage x max styrene content of resin *(see MSDS)* x average AP-42 factor *(see chart)* x $\frac{1 \text{ ton}}{2000 \text{ lb}}$ = VOC $\frac{\text{tons}}{\text{yr}}$

$\frac{125{,}000 \text{ lb resin}}{\text{yr}}$ x $\frac{0.32 \text{ lb styrene}}{1 \text{ lb gelcoat}}$ x $\frac{0.11 \text{ lb styrene emitted}}{1 \text{ lb styrene}}$ x $\frac{1 \text{ ton}}{2000 \text{ lb}}$ = 2.2 $\frac{\text{tons styrene}}{\text{yr}}$

Long-term Acetone Calculations

annual usage x weight of acetone x $\frac{1 \text{ ton}}{2000 \text{ lb}}$ = VOC $\frac{\text{tons}}{\text{yr}}$

$\frac{210 \text{ gal}}{\text{yr}}$ x $\frac{6.64 \text{ lb}}{\text{gal}}$ x $\frac{1 \text{ ton}}{2000 \text{ lb}}$ = .6972 $\frac{\text{tons}}{\text{yr}}$

Long-term Trimming & Grinding Calculations

annual waste x (1 minus filter efficiency) x $\frac{1 \text{ ton}}{2000 \text{ lb}}$ = PM $\frac{\text{tons}}{\text{yr}}$

$\frac{6{,}000 \text{ lb}}{\text{yr}}$ x (1 - 0.95) x $\frac{1 \text{ ton}}{2{,}000 \text{ lb}}$ = .15 $\frac{\text{tons}}{\text{yr}}$

STEP IV. RECORD YOUR RESULTS IN SECTION V OF THE PI-7 FORM:

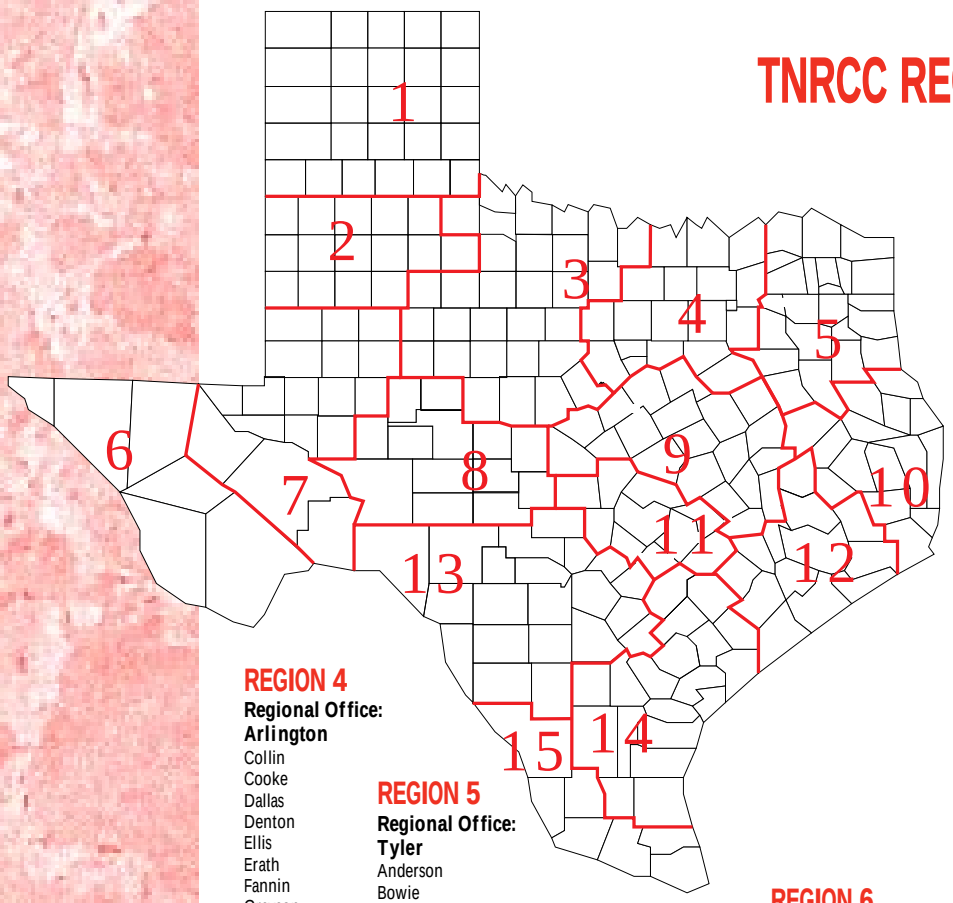
The example below illustrates how your chart might look. For the sake of example, it was assumed that this company sprays both resin and gelcoat in one booth. Therefore, the styrene emissions were added together before entering emissions into the chart. Again for the sake of example, it was assumed that all acetone was used in one separate cleanup area. If you use acetone in more than one area, simply divide the acetone emissions equally among those areas. Make sure that you provide emission rates for all emission points show in your diagram (see Section II of your PI-7 form).

Emission Point Number	Name of Source	Name of Air Contaminant	Emission Rate of Each Air Contaminant			
			lb/hr		tons/yr	
			Gaseous	Particulate	Gaseous	Particulate
1 SAMPLE	spray booth	styrene	12.5 lb/hr		3.725 tons/yr	
2	cleanup	acetone	.59 lb/hr		.6972 tons/yr	
3	trim booth	PM		.125 lb/hr		.15 tons/yr

APPENDIX G (CONT.)

APPENDIX H

TNRCC REGIONS



REGION 1
Regional Office: Amarillo

Armstrong
Briscoe
Carson
Castro
Childress
Collingsworth
Dallam
Deaf Smith
Donley
Gray
Hall
Hansford
Hartley
Hemphill
Hutchinson
Lipscomb
Moore
Ochiltree
Oldham
Parmer
Potter
Randall
Roberts
Sherman
Swisher
Wheeler

REGION 2
Regional Office: Lubbock

Bailey
Cochran
Crosby
Dickens
Floyd
Garza
Hale
Hockley
King
Lamb
Lubbock
Lynn
Motley
Terry
Yoakum

REGION 3
Regional Office: Abilene

Archer
Baylor
Brown
Callahan
Clay
Coleman
Comanche
Cottle
Eastland
Fisher
Foard
Hardeman
Haskell
Jack
Jones
Kent
Knox
Mitchell
Montague
Nolan
Runnels
Scurry
Shackelford
Stephens
Stonewall
Taylor
Throckmorton
Wichita
Wilbarger
Young

REGION 4
Regional Office: Arlington

Collin
Cooke
Dallas
Denton
Ellis
Erath
Fannin
Grayson
Hood
Hunt
Johnson
Kaufman
Navarro
Palo Pinto
Parker
Rockwell
Somervell
Tarrant
Wise

REGION 5
Regional Office: Tyler

Anderson
Bowie
Camp
Cass
Cherokee
Delta
Franklin
Gregg
Harrison
Henderson
Hopkins
Lamar
Marion
Morris
Panola
Rains
Red River
Rusk
Smith
Titus
Upshur
Van Zandt
Wood

REGION 6
Regional Office: El Paso

Brewster
Culberson
El Paso
Hudspeth
Jeff Davis
Presidio

REGION 7
Regional Office: Odessa

Andrews
Borden
Crane
Dawson
Ector
Gaines
Glasscock
Howard
Loving
Martin
Midland
Pecos
Reeves
Terrell
Upton
Ward
Winkler

REGION 8
Regional Office: San Angelo

Coke
Concho
Crockett
Irion
Kimble
Mason
McCulloch
Menard
Reagan
Schleicher
Sterling
Sutton
Tom Green

REGION 9
Regional Office: Waco

Bell
Bosque
Brazos
Burleson
Coryell
Falls
Freestone
Grimes
Hamilton
Hill
Lampasas
Leon
Limestone
Madison
McLennan
Milam
Mills
Robertson
San Saba
Washington

REGION 10
Regional Office: Beaumont

Angelina
Nacogdoches
Hardin
Houston
Jasper
Jefferson
Newton
Orange
Trinity
Polk
Sabine
San Augustine
San Jacinto
Shelby
Tyler

REGION 11
Regional Office: Austin

Bastrop
Blanco
Burnet
Caldwell
Fayette
Hays
Lee
Llano
Travis
Williamson

REGION 12
Regional Office: Houston

Austin
Brazoria
Chambers
Colorado
Fort Bend
Galveston
Harris
Liberty
Matagorda
Montgomery
Walker
Waller
Wharton

REGION 13
Regional Office: San Antonio

Atascosa
Bandera
Bexar
Comal
Dimmit
Edwards
Frio
Gillespie
Guadalupe
Karnes
Kendall
Kerr
Kinney
La Salle
Maverick
Medina
Reed
Uvalde
Val Verde
Wilson
Zavala

REGION 14
Regional Office: Corpus Christi

Aransas
Bee
Brooks
Calhoun
De Witt
Duval
Goliad
Gonzales
Jackson
Jim Wells
Kenedy
Kleberg
Lavaca
Live Oak
McMullen
Nueces
Refugio
San Patricio
Victoria

REGION 15
Regional Office: Harlingen

Cameron
Hidalgo
Jim Hogg
Starr
Webb
Willacy
Zapata

TNRCC REGIONAL OFFICES

1 AMARILLO
3918 Canyon Drive
Amarillo, TX 79109-4996
806/353-9251
FAX: 806/358-9545

2 LUBBOCK
4630 50th St., Suite 600
Lubbock, TX 79414-3509
806/796-7092
FAX: 806/796-7107

3 ABILENE
209 South Danville, Suite 200B
Abilene, TX 79605
915/698-9674
FAX: 915/692-5869

4 ARLINGTON
6421 Camp Bowie Blvd., Suite 312
Fort Worth, TX 76116
817/732-5531
FAX: 817/732-0175

5 TYLER
1304 South Vine
Tyler, TX 75701
903/595-2639
FAX: 903/595-1562

6 EL PASO
7500 Viscount Blvd., Suite 147
El Paso, TX 79925
915/778-9634
FAX: 915/778-4576

7 ODESSA
2626 J.B. Sheppard Pkwy. Blvd., Bldg. B-101
Odessa, TX 79761
915/362-6997
FAX: 915/362-4517

8 SAN ANGELO
301 W. Beauregard Ave., Suite 202
San Angelo, TX 76903
915/655-9479
FAX: 915/658-5431

9 WACO
6801 Sanger Ave., Suite 2500
Waco, TX 76710-7807
817/751-0335
FAX: 817/772-9241

10 BEAUMONT
3870 Eastex Fwy., Suite 110
Beaumont, TX 77703-1830
409/898-3838
FAX: 409/892-2119

11 AUSTIN
1700 S. Lamar Blvd., Bldg. 1, Suite 101
Austin, TX 78704-3360
512/463-7803
FAX: 512/447-8528

12 HOUSTON
4150 Westheimer
Houston, TX 77027-4417
713/625-7900
FAX: 713/625-7987

13 SAN ANTONIO
140 Heimer Rd., Suite 360
San Antonio, TX 78232-5042
210/490-3096
FAX: 210/545-4329

14 CORPUS CHRISTI
1231 Agnes St., Suite 103
Corpus Christi, TX 78401
512/882-5828
FAX: 512/882-7364

15 HARLINGEN
513 East Jackson
Matz Bldg., Room 204
Harlingen, TX 78550
210/425-6010
FAX: 210/412-5059

APPENDIX J

LOCAL PROGRAMS

If your facility will be located in one of these cities or counties, also send a copy of the PI-7 form to the local program.

The local programs listed below are contracted with the TNRCC to enforce Texas Regulations. Contact these programs for further information on how they affect thermoset resin composite facilities.

DALLAS

Environmental & Health Services, Air Pollution Control Manager
320 E. Jefferson Blvd Rm LL13
Dallas, Texas 75203
Telephone: 214/948-4435
Fax: 214/948-4426

EL PASO CITY/COUNTY

Associate Director, Air Pollution Control Program
El Paso City/County Health and Environmental District
222 South Campbell Street
El Paso, Texas 79901
Telephone: 915/543-3650
Fax: 915/543-3649

FORT WORTH

Coordinator, Air Pollution Control
City of Fort Worth
5000 MLK Freeway
Fort Worth, Texas 76119-4166
Telephone: 817/871-5450
Fax: 817/871-5464

GALVESTON COUNTY

Director, Pollution Control Division
Galveston County Health District
Box 939
La Marque, Texas 77568
Telephone: 409/938-2251 Houston: 713/996-0903, extension 251
Fax: 409/938-2321

HOUSTON

Chief of Enforcement
Bureau of Air Quality Control
7411 Park Place
Houston, Texas 77087
Telephone: 713/640-4200
Fax: 713/640-4343

There may be other local, city and county agencies that have requirements for thermoset resin composite facilities, such as your fire department.

NOTES

RG-135 (5/95)

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November 1996
RG-135
"Texas Thermoset Resin Facilities Standard Exemption #113
A Guide to Requirements and Record-Keeping" First Edition

ERRATA

Errata for Page 7

Texas Natural Resource Conservation Commission

Standard Exemption 113 - Polyester/Thermoset Resins

Effective June 7, 1996
Incorporated By Reference Into 30 TAC 116,
Control Of Air Pollution By Permits For New Construction
Or Modification, §116.211

Note: *Standard Exemptions exempt the processes and equipment they list or describe from the Texas Natural Resource Conservation Commission (TNRCC) air permitting process. However, a facility claiming one or more standard exemptions **may** still need a permit for other, non-exempt processes and equipment. Further, a standard exemption does not exempt a facility from other TNRCC rules and regulations.*

113. Facilities using thermoset resins (excluding resins that do not emit air contaminants) to manufacture or repair products, provided that the following conditions are satisfied for (a) and either (b) or (c):

(a) The following requirements shall apply to all thermoset resin facilities:

(1) Before construction begins, the facility must be registered with the commission using Form PI-7.

(2) Records of resin and acetone usage shall be kept on a monthly and calendar year-to-date basis to show compliance with this exemption, and shall be maintained for the most recent 24 months.

(3) All resin spraying and cleaning operations shall be conducted between two hours before sunrise and two hours after sunset. The exhaust fan(s) must be operating during and for at least 30 minutes after any usage of resin and/or cleaning solvents.

(4) All solid trim grinding operations shall be vented through a dry filter system or a water wash system which has a particulate removal efficiency of at least 95%. Particulates trapped in the dry filter system or water wash sludge shall be handled and stored in a way to minimize the escape of fugitive dust emissions.

(5) No more than five tons of acetone shall be used per year (gross usage minus waste disposal).

(b) The following requirements shall apply to facilities that have spraying operations (the facilities may include non-spraying operations):

(1) No more than 75 tons of resin and gelcoat combined shall be used per year (gross usage minus waste disposal).

(2) All resin spraying operations shall be conducted in a booth or an enclosed work area and the emissions shall be exhausted through elevated stack(s). All stacks shall discharge vertically to the atmosphere with no restrictions or obstructions to flow. Each stack shall meet one of the following minimum requirements:

(A) a flow rate of 20,000 actual cubic feet per minute (acfm) and the greater of six feet above the peak of the manufacturing building or 25 feet above ground level; or

(B) a flow rate of 15,000 acfm and the greater of six feet above the peak of the manufacturing building or 30 feet above ground level.

(3) No more than 1,000 pounds per year of resin shall be used outdoors.

(4) If annual resin usage is less than 1,000 pounds, a facility is exempt from all requirements of this exemption except recordkeeping (see 113(a)(2)).

(c) The following requirements shall apply only to non-spraying operations:

(1) No more than 150 tons of resin and gelcoat combined shall be used per year (gross usage minus waste disposal).

(2) All resin operations shall be conducted in a booth or an enclosed work area or the manufacturing building and the emissions shall be exhausted through elevated stack(s). All stacks shall discharge vertically to the atmosphere with no restrictions or obstructions to flow. Each stack shall meet one of the following minimum requirements:

(A) a flow rate of 20,000 acfm and the greater of six feet above the peak of the manufacturing building or 25 feet above ground level; or

(B) a flow rate of 15,000 acfm and the greater of six feet above the peak of the manufacturing building or 30 feet above ground level.

(3) No more than 3,000 pounds per year of resin shall be used outdoors.

(4) If annual resin usage is less than 3,000 pounds, a facility is exempt from all requirements of this exemption except recordkeeping (see 113 (a)(2)).

Eratta for Page 8

#4) The question should read:

Will you use less than 5 tons of acetone per year? (That's 10,000 pounds, or about twenty six 55-gallon drums annually.)

#5) The sentence following the "no" selection box should read:

If no, you may use no more than 1,000 pounds of resin outdoors. Continue to question 10.

#8) The question should read:

Will you use less than 5 tons of acetone per year? (That's 10,000 pounds, or about twenty six 55-gallon drums annually.)

#9) The sentence following the "no" selection box should read:

If no, you may use no more than 3,000 pounds of resin outdoors. Continue to question 10.

#10) Part (A) should read:

a minimum flow rate of 20,000 actual cubic feet per minute (acfm). And, a stack height of at least six feet above the peak of the manufacturing building or 25 feet above ground level, whichever is greater.

#10) Part (B) should read:

a minimum flow rate of 15,000 actual cubic feet per minute (acfm). And, a stack height of at least six feet above the peak of the manufacturing building or 30 feet above ground level, whichever is greater.

Eratta for Page 9

#13) The question should read:

Will all your resin fabrication and cleaning operations be conducted between 2 hours before sunrise and 2 hours after sunset?